

Bulgaria  
Bistritza, Dupnitsa  
Phone/Fax: (+359 701) 3 13 38  
E-mail: corkst@netvisio.net

Bulgaria  
Sofia 1233, P.O. Box 136  
Phone/Fax: (+359 2) 873 78 21  
E-mail: cortec@abv.bg

Bulgaria  
Plovdiv 4000  
Phone/Fax: (+359 32) 65 13 77  
E-mail: corkst@netvisio.net

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**From:** Zdravko Geshev – CotTec Ltd.

**Address:** BULGARIA, Sofia, str. Acad G.Bonchev, 1

**Tel:** 00359 2 8737821

**Fax:** 00359 2 8737821

**E-mail:** cortec@abv.bg

**To:** UNITED STATES PATENT AND TRADEMARK OFFICE

Mrs. Marissa L. Ferguson-Samreth

**Att. to:** Judy Nguyen

**Fax:** 571-273-8300

**Date:** January 18, 2007

**Pages:** 5 incl.

**Re:** United States of America Patent Application No. 10/031,592

Title: POLYCHROMATIC PRINTED CORKS AND METHOD  
FOR MAKING THE SAME

Filing Date: January 23, 2002

Inventor: Ivailo E. Stanimirov et al.

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Dear Mrs. Ferguson,

We are surprised by your evaluation for the detailed technical arguments in our letter from September, the 12<sup>th</sup>, 2006, which you find as not being persuasive. They have a completely technical aspect and they are the result of our long laboratory experiments. Furthermore, on the basis of these researches was created our technology (method and machine) whose invention level you do not deny.

We would like to express our disagreement regarding the rejection of our claims 10 and 7 under 35 U.S.C. 102 (b) as making a stand against the patent of Ramzeilles (FR 2.312.373), due to the different purpose and technical capabilities of the two methods.

Regarding the comment that it is not clear whether the cork is being a natural cork, we must note that it is about natural material, which has no analog so we find this explanation for unnecessary. The wide use of natural cork for the cork production is the main reason this material to be put on the first place among all the material with similar physical and mechanical properties in our patent claim application (page 1 of patent application form)

We are going to perform a technical comparison between the Ramzeilles method (FR 2.312.373) and our method with regard to the possibility of **implementing high-quality polychromatic industrial imprint on the non-calibrated cylindrical surface of corks made of natural cork or cork mixtures.**

Ramzeilles teaches (FR 2.312.373) that in an operating printing position a mutual rolling of the printing cylinder 29 on fig.1 around the object, situated on the free-rolling mandrels with the shape of intersected cone (mandrels 4 fig.1). The

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rolling itself is implemented on the basis of frictions, due to lack of kinematic chain for synchronized drive of mandrels (mandrels 4) and the printing cylinder 29 (fig.1). It is well known that when setting circular motion on the basis of frictions the result is "sliding". In this case that interfering influence does not allow the performance of a precise control over the mutual angular situation of the imprinted object and the imprinting element. Furthermore, that problem expands additionally by the fact that a rolling is performed of cone surface (mandrels 4 fig.1) with the situated object to be imprinted, around the cylindrical surface of the printing cylinder 29 (fig.1) (Claim 7, Ramzeilles (FR 2.312.373)). It is obvious that in the so resulted linear contact between the cylinder and the cone surfaces appears simultaneous contact of vertices with different peripheral velocities caused by the variable cone surface radius.

In the presence of these technical circumstances the achieving of a clear precise contour or flawless imprint is impossible. Perhaps that is the reason the author Ramzeilles to define the application of his method – "...for low-cost applications..." and not to mention anywhere that the performing of a polychromatic precise imprint is possible, i.e. it is possible to implement several different in color imprints, for which there are no requirements to be connected in a common imprint or the deformation of the outline is of no importance. Most probably this is possible when the object to be imprinted on is a thermoshrinking capsule and it is about to be put through additional thermal deformation in relevance with its final purpose.

At the machine that we have developed for polychromatic imprint a precise control is achieved between the angular situation of the four simultaneously printing plates and the cork.

That was comprehensively explained in our letter from September, 12<sup>th</sup>, 2006. The method we have invented allows the imprint of a precise polychromatic images, even on materials characterized with residual structural deformation such as natural cork, cork mixtures (agglomerate cork) and etc. I hope that you personally have been convinced by the sent samples.

Your statement that the thermoshrinking capsule might be assumed as an object with non-calibrated outer surface is true only in case the capsule is out of the offset imprinting machine.

During the technological process the capsule is put on a mandrel (mandrels 4 fig.1) to take its exact physical form. Then it is transferred between the separate operating positions of the machine, including the offset printing position. At the offset imprinting machine described by Ramzeilles the image from the printing elements 30a and 30b fig.1 is first transferred on the cylinder 29 fig.1, after which it is imprinted on the object. And with the technology we use all printing plates are in **a simultaneous and direct contact with the object to be printed on.**

Once again we would like to remind you that the offset print requires the surfaces of the object to be smooth, clean, light and with exact geometric dimensions, which is the reason this type of printing to be inapplicable on cork made of natural cork or cork mixtures.

Dear Mrs. Ferguson, I am convinced that the technical explanations we have stated regarding the Ramzeilles patent you have presented (FR 2.312.373), discloses in an absolute manner that it is **IRRELATIVE** to the technology we have developed (Method, Machine and Product). We would like to express our confidence that the cork with industrially imprinted high-quality polychromatic image on its cylindrical surface is **an invention produced by a unique technology comprising two inventions (method and machine).**

We hope sincerely that the generally accepted patent criteria will be applied on the one hand by you and on another by the institution you represent and the cork under claim 1 (8) will be acknowledged as an invention. This was performed without a hesitation by your expert colleagues in the patent departments of:

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|--------------------------|--------------------------|------------------|
| - Bulgaria               | Patent No: BG63733       | Date: 15.01.2003 |
| - Eurasian Patent Office | Patent No: 003449 B1     | Date: 26.06.2003 |
| - European Patent Office | Patent No: EP 1200269 B1 | Date: 23.02.2005 |
| - China                  | Patent No: ZL 00810980.X | Date: 06.04.2005 |

Sincerely yours,

**Dipl. Eng. Zdarvko GESHEV**

**Inventor**

**Fax: +359 2 8628541**

**E-mail: geshev@geshevaautomation.com**